

SOLAR OBSERVATIONS

SOLAR AND SKY RADIATION MEASUREMENTS DURING JUNE, 1925

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For a description of instruments and exposures and an account of the method of obtaining and reducing the measurements the reader is referred to the REVIEW for January, 1924, 52:42 and January, 1925, 53:29.

From Table 1 it is seen that solar radiation intensities averaged slightly above normal values for June at all three stations.

Table 2 shows that the total solar and sky radiation received on a horizontal surface averaged above normal at the three stations for which weekly normals have been computed.

At Washington skylight polarization measurements made on 8 days give a mean of 49 per cent, with a maximum of 60 per cent on the 10th. At Madison, measurements made on 6 days give a mean of 58 per cent with a maximum of 62 per cent on the 23d. These are close to normal values for June at Madison and slightly above at Washington.

TABLE 1.—Solar radiation intensities during June, 1925

[Gram-calories per minute per square centimeter of normal surface]

Washington, D. C.

Date		Sun's zenith distance										Local mean solar time	
		8 a.m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°		Noon
		75th mer. time	Air mass										
			A. M.					P. M.					
			e.	5.0	4.0	3.0	2.0	1.0	2.0	3.0	4.0		5.0
June 2	mm.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mm.		
3	15.11			0.60	0.86	1.21					14.60		
4	17.37				0.86	1.14					19.89		
5	17.37				0.64	1.11					14.10		
10	17.96			0.71	0.99	1.36	1.11				10.21		
11	6.27					1.41					6.76		
12	8.18					1.24					8.81		
15	17.96			0.71	0.95						17.37		
19	12.68			0.76	0.95						12.68		
20	11.81		0.52	0.70	0.93						11.38		
22	11.81		0.61	0.79	0.99						9.83		
26	11.81		0.60	0.77	0.99	1.27					11.38		
Means			0.58	0.72	0.91	1.28	(1.11)						
Departures			-0.03	+0.01	+0.03	+0.04	+0.20						

¹ Extrapolated.

TABLE 1.—Solar radiation intensities during June, 1925—Contd.

[Gram-calories per minute per square centimeter of normal surface]

Madison, Wis.

Date	Sun's zenith distance										Local mean solar time	
	8 a.m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°		
	75th mer. time	Air mass										
		A. M.					P. M.					
		e.	5.0	4.0	3.0	2.0	1.0	2.0	3.0	4.0		5.0
June 6	mm.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mm.	
8	13.61				0.93	1.19					15.11	
9	14.10				1.18	1.41					9.53	
10	9.47				1.20	1.39					8.18	
13	6.76		0.99	1.08							7.29	
16	11.38				1.18						14.10	
18	10.21					1.37					19.23	
20	13.13				1.19						11.81	
23	13.13				1.18	1.38					13.61	
26	9.14				1.19	1.42					10.59	
29	8.18				1.23	1.42					7.57	
Means			(0.99)	(1.08)	1.16	1.37						
Departures			+0.11	+0.11	+0.06	+0.05						

Lincoln, Nebr.

June 4	15.11	-----	-----	-----	1.08	-----	-----	-----	-----	-----	17.37
5	14.60	-----	0.79	0.93	1.10	1.31	-----	-----	-----	-----	14.10
6	10.97	-----	0.75	0.91	1.10	1.33	-----	-----	-----	-----	13.13
8	7.87	-----	1.01	1.14	1.31	-----	-----	-----	-----	-----	7.57
19	16.20	-----	-----	-----	-----	1.14	0.99	0.88	-----	-----	14.10
25	10.21	-----	0.98	1.11	1.26	-----	-----	-----	-----	-----	8.81
26	13.13	-----	-----	-----	1.34	1.12	0.94	-----	-----	-----	10.21
29	10.21	-----	-----	0.87	1.09	1.35	-----	-----	-----	-----	9.47
Means	-----	-----	0.88	0.99	1.16	1.33	(1.13)	(0.96)	(0.85)	-----	-----
Departures	-----	-----	+0.12	+0.07	+0.08	-0.02	+0.04	+0.06	+0.12	-----	-----

TABLE 2.—Solar and sky radiation received on a horizontal surface

[Gram-calories per square centimeter of horizontal surface]

Week beginning—	Average daily radiation					Average daily departure from normal		
	Wash- ington	Mad- ison	Lin- coln	Chi- cago	New York	Wash- ington	Mad- ison	Lin- coln
	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.
June 4	535	634	677	536	472	+41	+137	+137
11	553	502	493	480	543	+59	-8	-70
18	445	561	476	454	548	-49	+38	-97
25	577	607	676	530	397	+86	+73	+89
Excess since first of year on July 1, 1925	-----					+924	+2,114	+406